How to Make Thermite

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Thermite is an incendiary reaction that can burn as hot as 2500°C or more. That means that if you lit a pound of thermite on top of your car it would melt through your hood, through your engine, through your driveway, and make a hole in the ground. Thermite is a reaction between a metal (aluminum, magnesium) and a metal oxide (iron oxide, copper oxide, manganese oxide…) this reaction has a high ignition temperature, but once its ignited it supplies it's own oxygen. This allows for some interesting applications, for example thermite is still used today for underwater welding.

Safety Precautions

Before you get started, you must realize that what you are about to do is a dangerous and energetic reaction that should only be performed with the utmost care. Besides its ridiculously high temperature, thermite also emits UV radiation that can do permanent damage to your eyes and if you don't want to wear a welding mask, at least put on a pair of good quality sun glasses. Also, metals with a low melting point (zinc, lead) will vaporize and explode if near the thermite reaction.

Supplies

There are many kinds of thermite, but the most common uses iron oxide and aluminum powder, both of which can be made at home (see my instructions for How to Make Iron Oxide and How to Make Aluminum Powder). You also need a way to ignite the thermite. Most people use magnesium ribbon, but I haven't had much luck with that and usually use potassium permanganate and glycerine. Potassium permanganate is a filter cleaner and

a dye sold at hardware stores or online at e-Bay. Glycerine is a skin care produce and can be found at any drug store like CVS and once again at e-Bay. When mixed they spurt flames like my mother's cooking. Additional things that you might want include a flowerpot to contain the mixture while it's burning, bricks to hold it up, and something to melt. If you don't have anything to destroy, at the very least just put some sand under it to keep it from ruining your driveway. What ever you do, don't use water to catch the drops. Water will instantly vaporize, explode, and spray you with molten iron- generally something to avoid. If you're interested, this is an example of what happens when you have even the slightest amount of moisture.

1. By weight the ratio of iron oxide to aluminum powder is 8-3. Both should be powdered as fine as possible as this will make it burn hotter and ignite easier. Measure them out, and mix as thoroughly as possible- this will make it burn faster and hotter and is well worth your time.

2. Pour the thermite into your container. Flower pots are most commonly used, but almost anything will work. Flower pots are used because clay is one of the only materials that will still be there after hell has reigned. If you do use a flower pot, you should consider using two. The second pot will contain the shards of the first and reduce the risk of it breaking halfway through. The only thing that I would advise against is glass as it might shatter before it melts.

3. If you're using magnesium, stick it in, fray the top to make it easier to light, and light it. If you're using potassium permanganate, then pour it in, mix it in a little bit with the thermite, and add the glycerine. Rule of thumb is two to three parts glycerine to one part potassium permanganate. It usually helps to stir the ingredients after you add the glycerine. If it still won't light, adding powdered magnesium or powder rubbed off of a sparkler makes it easier to ignite. Whatever you do, stand way back.

4. If it lights, then yell, cheer, and behold the awesome power of thermite. If it doesn't light, then re-evaluate and try something different.

Thermite can also be bought online from e-Bay or Skylighter. If you buy from e-Bay then you can sometimes buy it as a kit, but you will have to buy the chemicals individually from Skylighter.

If you have any success with this and feel like more of a challenge, or just want to try something different, then this website has good instructions for silicon dioxide thermiteand other more exotic recipes.